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Opinion

A Multidisciplinary Review of Children in the COVID-19 Era

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The emergence of the COVID-19 pandemic has affected us all in all aspects of life, ranging from the economic to personal activities. The most affected is the daily routines of every person globally. This is due to lockdowns and restrictions with emphasis on working at home and loss of employment. Such conditions create a stressful environment for adults especially parents caring for young children. It is a known fact that children are affected by their environments and the presence of this pandemic is no exception.

There is scientific literature that states a healthy pregnancy, balanced nutrition, immunity to diseases, restful sleep, a family environment rich in positive stimuli and a high-equality educational system as the fundamentals for optimal child growth and development. These conditions are relevant to the prevention of toxic stress and for the development of strong and lasting neuronal connections in the child's brain. It is the tools (social restrictions, shutdowns and school closures) used to mitigate the threat of a pandemic may threaten child growth and development [1].

In terms of the COVID-19 timeline, parents have noticed their children's physical activity had decreased whereas children's sedimentary behavior had increased between the pre-COVID-19 (February 2020) and the early COVID-19 (April-May 2020) periods. This pattern was primarily observed amongst older children (9 to 13 years). Though physical activity typical declines and sedimentary behavior increases amongst older children, the COVID-19 pandemic maybe accelerating this trend. Also, another issue of certain is that older children may show behavioral habits of inactivity during the pandemic that are extremely difficult to change when the pandemic-related school closure and organised sports cancellations end. These short term changes in physical activity and sedimentary behavioral in reaction to the COVID-19 pandemic may become permanently entrenched, leading to increased risk of obesity, diabetes and cardiovascular disease in children and maybe later in life [2].

During these restrictions and lockdowns of mall, schools, parks, cancellation of youth sports and activities classes may prevent children from achieving recommended levels of physical activity. Studies have shown the most common physical activities during the early-COVID-19 period were free-play/structured activity (e.g. running around, tag) and going for a walk. Children were found to have approximately 90min school related sitting and over 8 hours of leisure-related sitting a day. Leisure time would include playing video games, internet, texting, electronic media, video calls with friends and family, phone calls listening to music and television. This in turn increases the risk for addiction to social media and the internet where there has been an association been this and adolescent smoking [2,3].

Education during the COVID-era is expected to be greatly affected due to school closures but promotion of distance learning solutions using digital teaching aids has been used to suffice. Though this framework has been proposed, focusing on digital education will widen the learning gap between low and high socioeconomic classes. This combination of school closures and child poverty can be considered a social crisis in the making. These effects would be most felt in the poorest communities and rural areas with no internet facilities or slow internet speeds. Families may also struggle with the costs of broadband services because of the failing economy. Also, with the closure of schools children sit continuously for longer periods of time, e.g. at computers and can lead to back pain, eye strain and disturbed sleep [3].

The closure of schools also presents with the lack of a competitive environment where schools provide the social and competitive activities that children may enjoy and interacting with children from different areas, helps them to adapt to adverse environments and develop social connections. This can be seen in studies that show school closures and social disconnection could hamper the psychological and personal development. With examinations being postponed or cancelled due to the pandemic, some children could be anxious about their futures. These issues could also delay further education or the start to their working life [3].

The healthcare system is overwhelmed by the pandemic which has led to reductions in many routine health services and parents have been reductions in many routine health services and parents have been reluctant to attend health facilities. Since vaccinations were already an issue before the COVID-19 era, the pandemic could worsen this situation [3].

The COVID-19 response also has an effect on disabled children where social distancing will create more obstacles by interrupting important services, such as healthcare and personal care, nutrition, and education. These negative changes on disabled children population can also cause behavioral changes [3].

With humanity experiencing high levels of stress due to the pandemic, it may create tolerable or toxic stress for children, depending on if and how support is ensured. Adults providing care and support to their children with a sense of security and affection, creates an environment that the child can biochemically recognize and quickly return to levels of relatively normal physiological functioning without further damage. Inversely, when these parental conditions are absent or insufficient, a child's body may fail to return to basal levels and impact cardiovascular and neurological systems, with consequent irreversible loss of connections in the infant brain due to toxic stress. In addition to increased levels of anxiety, excessive concern with cleanliness, mood disorders, panic or obsessive-compulsive disorder and post-traumatic stress can be experienced by children via their parents' own stress levels. Post-traumatic stress in children confined during pandemic situations with their families carrying out normal routines show stress levels that are four times higher for children who have been quarantined [1].

On a genetic level of development where environmental exposure plays an important role, social restrictions and isolation where leisure activities are done only indoors, where people wear masks and the learning of facial expressions, communication and language is restricted; and where demonstrating affection is discouraged by many - there is a tendency towards limitations in the formation of the brain, especially the social brain with consequent impairment on the acquisition of cognitive, behavioral, social and communication skills [1].

In the scenario of children spending the whole day at home, there are increased lonely periods and moments for child self-care. These situations put children (under age 13 years) with younger siblings at increased risk of domestic accidents, serious behavioral impacts and developmental disorders, such as selective mutism, speech delay, social interaction deficits and others [1].

Pre-existing literature demonstrates that a lack of basic necessities such as food, water and clothing causes frustration and is associated with anxiety after quarantined periods in previous epidemics [1].

In the previous social context before the COVID-19 pandemic related to dietary errors, child malnutrition or obesity worsens during the pandemic due to closures of restaurants, institutions providing foods, such as schools or NGOs. This then leads to higher consumption of canned foods (high in sodium) and industrialized foods that have longer shelf-life with of loss of essential nutrients for brain development, resulting in a negative impact on overall child development. This combination of malnutrition and childhood obesity tends to be associated with higher risk of respiratory infections (associated with vitamin D deficiency) and precarious immune responses. There clear evidence that these patients get worse under these conditions and may even continue after the pandemic has ended, due to a growing economic crisis and accentuated social vulnerabilities [1].

Children in underdeveloped countries may also have higher infection rates, especially living in slums, immigration centers, orphanages and other institutions. These children are in close proximity with other children, with limited access to healthcare and to clean water and sanitation, which are likely to facilitate the spread of the virus [1].

The presence of the pandemic can lead to increased risk of child exploitation especially amongst low socioeconomic communities and communities and females. The widespread job losses and greater economic insecurity would lead particular problems in the poor areas of the world. Child exploitation can varying from child labor, domestic violence, early child marriages and sexual exploitation. Children can also lose family members and be orphaned during this time [3].

There is also great awareness of the pandemic since parents have discussed in detail with their children. UNICEF has developed eight tips to help and comfort children during the pandemic. These include parents being honest, reassuring them and explaining what practical measures they can take to keep themselves safe [3].

Though the pandemic has shown so many disadvantages of isolation of children, a noticeable factor found was developing relationships and empathy at home. Children who have spent time with their families have developed closer relationships with them and being aware of the input of the pandemic could also help to develop more humanity as they realize the value of human life [3].

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